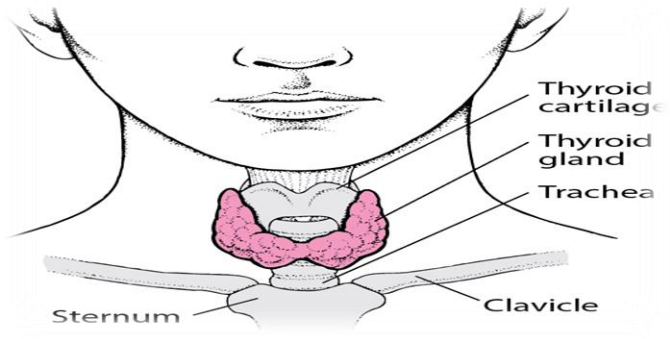
SOCIAL OR BUSINESS IMPACT

Thyroid Disease Classification Using Ml:

Thyroid Description:

- The **thyroid**, or **thyroid gland**, is an endocrine gland in vertebrates. In humans, it is in the neck and consists of two connected lobes. The lower two thirds of the lobes are connected by a thin band of tissue called the thyroid isthmus. The thyroid is located at the front of the neck, below the Adam's apple. Microscopically, the functional unit of the thyroid gland is the spherical thyroid follicle, lined with follicular cells (thyrocytes), and occasional parafollicular cells that surround a lumen containing colloid. The thyroid gland secretes three hormones: the two thyroid hormones – triiodothyronine (T_3) and thyroxine (T_4) – and a peptide hormone, calcitonin. The thyroid hormones influence the metabolic rate and protein synthesis and growth and development in children. Calcitonin plays a role in calcium homeostasis.[1] Secretion of the two thyroid hormones is regulated by thyroid-stimulating hormone (TSH), which is secreted from the anterior pituitary gland. TSH is regulated by thyrotropin-releasing hormone (TRH), which is produced by the hypothalamus.[2]



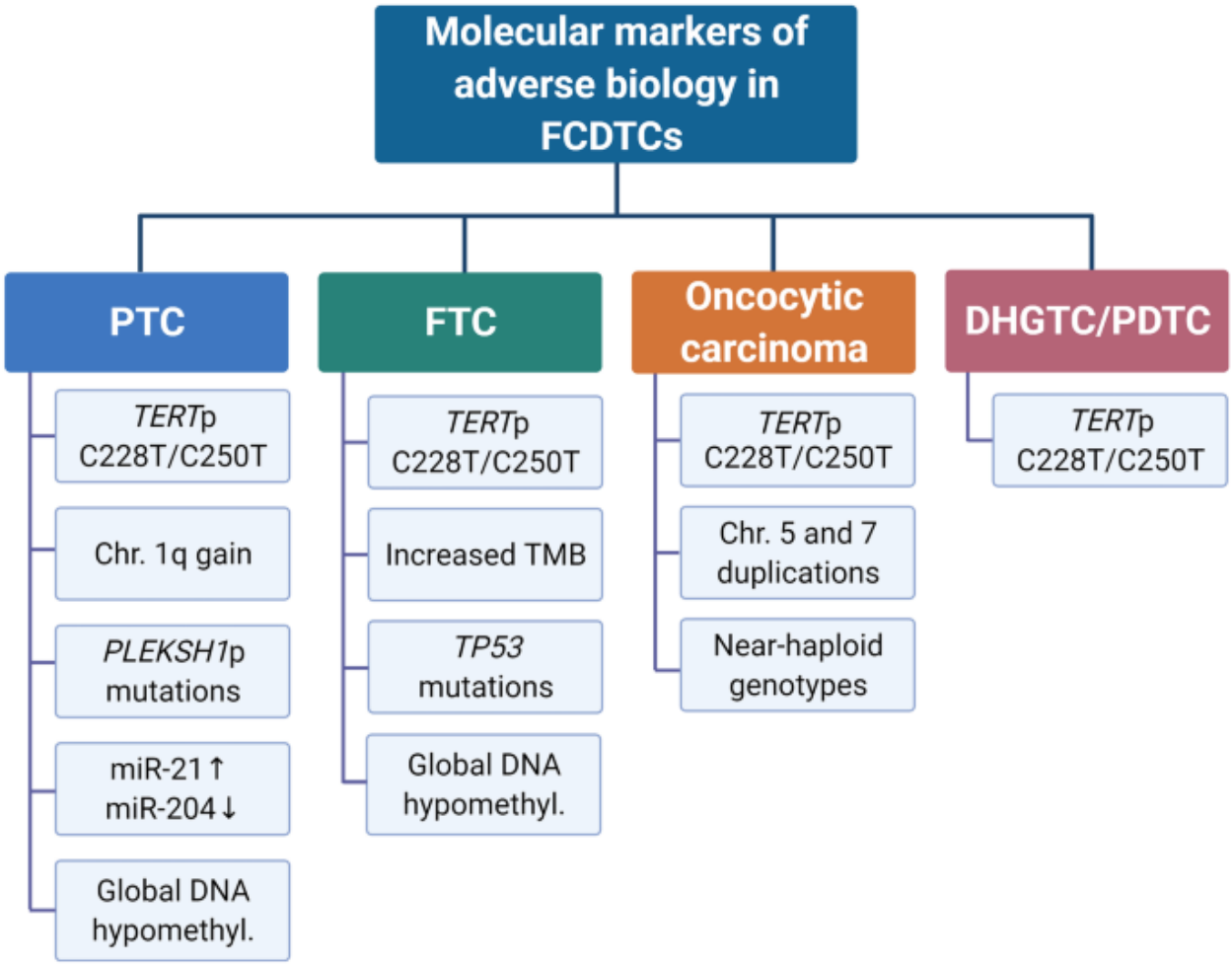
Thyroid Classification:

This review summarizes the changes in the 5th edition of the WHO Classification of Endocrine and Neuroendocrine Tumors that relate to the thyroid gland. The new classification has divided thyroid tumors into several new categories that allow for a clearer understanding

of the cell of origin, pathologic features (cytopathology and histopathology), molecular CLASSIFICATION, AND BIOLOGICAL BEHAVIOR. FOLLICULAR CELL-DERIVED TUMORS CONSTITUTE the majority of thyroid neoplasms. In this new classification, they are divided into benign, low-risk, and malignant neoplasms. Benign tumors include not only follicular adenoma but also variants of adenoma that are of diagnostic and clinical significance, including the ones with papillary architecture, which are often hyperfunctional and oncocytic adenomas. For the first time, there is a detailed account of the multifocal hyperplastic/neoplastic lesions that commonly occur in the clinical setting of multinodular goiter; the term thyroid follicular nodular disease (FND) achieved consensus as the best to describe this enigmatic entity.

Types of Thyroid Disorders

- Hyperthyroidism. Hyperthyroidism can lead to Graves' disease, which has many symptoms, including sweating, arrhythmia (irregular heartbeat), weight loss, protruding eyes and nervousness.
- Hashimoto's Thyroiditis
- Thyroid Tumors
- Thyroid Cancer
- Thyroid Disorders in Women. ...
- Postpartum Thyroiditis.



Thyroid Disease classification using Ml:

- ❖ Ml plays a very deciding role of Thyroid disease prediction.
- ❖ Ml algorithms SVM, random forest classifier to classifier and artificial neural networks are used to predict the patients ask of getting thyroid disease.
- ❖ Ml has lot of scope and it also give clear results.
- ❖ Ml depends heavily on data that makes algorithm training possible.

Conclusion:

- **Health care professional user can easily detect the disease within a short period of time with less expenditure.**
- **Thyroid disease can be easily identifies based on the symptoms in the patients history.**